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EXAMINER	
LANDSMAN, ROBERT S	

ART UNIT	PAPER NUMBER
1647	14

DATE MAILED: 04/14/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Applicati n No.	Applicant(s)	
	09/781,880	GLUCKSMANN ET AL.	
	Examiner	Art Unit	
	Robert Landsman	1647	

-- The MAILING DATE f this communication appears on the cover sheet with the corresp ndence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 March 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-23* is/are pending in the application.

4a) Of the above claim(s) *8-11 and 13-23* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7 and 12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *12 February 2001* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Pri rity under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *6,7,8* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: *Sequence Comparisons A-D* .

DETAILED ACTION

1. Formal Matters

A. The Information Disclosure Statement, filed 10/11/01, has been entered into the record.

B. The Information Disclosure Statement, filed 2/26/02, has been entered into the record.

C. The Information Disclosure Statement, filed 6/4/02, has been entered into the record.

D. Claims 1-23 are pending and were subject to restriction in Paper No. 9, mailed 9/24/02. In Paper No. 11, Applicants elected Group I, claims 1-7 and 12. However, no SEQ ID NO was elected. Therefore, the Examiner sent out a new restriction, Paper No. 12, mailed 2/12/03 in order for Applicants to elect specific SEQ ID NOs. In Paper No. 13, filed 3/11/03, Applicants elected Group III, SEQ ID NO:7-9, without traverse. Therefore, this restriction is deemed proper and is made FINAL.

2. Specification

A. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed. First, the word "novel" should be removed since all patents claim novel subject matter. Second, the title is drawn to G protein-coupled receptor proteins, whereas the claims are drawn toward nucleic acids encoding these proteins.

B. The specification is objected to since numerous pages in the specification do not recite ATCC Nos., for example, page 11, lines 20, 23 and 26 and page 17, lines 9-10.

C. Figure 5 is objected to since the heading recites "Anglogenic" instead of "Angiogenic."

3. Claim Objections

A. Claims 1-7 and 12 are objected to since they recite non-elected subject matter, SEQ ID NO:1-6. In addition, the ATCC Nos. are missing from the claims, as well as a date of deposit on page 11, line 28.

4. Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

A. Claims 1-7 and 12 are rejected under 35 U.S.C. 101 because the claimed invention is not supported by a specific, substantial and credible asserted utility or a well established utility. These claims are directed to the polynucleotides of SEQ ID NO:7 and 9, which encode the protein of SEQ ID NO:8. However, the invention encompassed by these claims has no apparent or disclosed patentable utility. This rejection is consistent with the current utility guidelines, published 1/5/01, 66 FR 1092. The instant application has provided a description of an isolated protein. However, the instant application does not disclose a specific and substantial biological role of this protein or its significance.

However, it is clear from the instant specification that the claimed receptor is what is termed an "orphan receptor" in the art. The instant application does not disclose the biological role of the claimed protein or its significance. Applicants disclose in the specification that the claimed receptor is believed to be a G protein-coupled receptor and that these 7 transmembrane receptors are a major target of drug development. However, the basis that the receptor of the present invention is a 7 transmembrane receptor is not predictive of a use. There is little doubt that, after complete characterization, this protein will probably be found to have a patentable utility. This further characterization, however, is part of the act of invention and, until it has been undertaken, Applicants' claimed invention is incomplete.

The instant situation is directly analogous to that of which was addressed in Brenner v. Manson, 148 U.S.P.Q. 689 (Sus. Ct, 1966), in which a novel compound which was structurally analogous to other compounds which were known to possess anticancer activity was alleged to be potentially useful as an antitumor agent in the absence of evidence supporting this utility. The court expressed the opinion that all chemical compounds are "useful" to the chemical arts when this term is given its broadest interpretation. However, the court held that this broad interpretation was not the intended definition of "useful" as it appears in 35 U.S.C. 101, which required that an invention must have either an immediate obvious or fully disclosed "real-world" utility. The court held that:

> "The basic quid pro quo contemplated by the Constitution and the Congress for granting a patent monopoly is the benefit derived by the public from an invention with substantial utility," "[u]nless and until a process is refined and developed to this point - where specific benefit exists in currently available form – there is insufficient justification for permitting an applicant to engross what may prove to be a broad field," and "a patent is not a hunting license," "[i]t is not a reward for the search, but compensation for its successful conclusion."

The specification discloses that the polynucleotides of the invention encode proteins which have significant sequence similarity to known G protein-coupled receptors. Based on the structural similarity, the specification asserts that the newly disclosed SEQ ID NO:7 and 9, and the encoded protein of SEQ ID NO:8, have similar activities. The assertion that the disclosed proteins have biological activities similar to known G protein-coupled receptors cannot be accepted in the absence of supporting evidence because generally, the art acknowledges that function cannot be predicted based solely on structural similarity to a protein found in the sequence databases. For example, Skolnick et al. (2000, Trends in Biotech. 18:34-39) state that knowing the protein structure by itself is insufficient to annotate a number of functional classes, and is also insufficient for annotating the specific details of protein function (see Box 2, p. 36). Similarly, Bork (2000, Genome Research 10:398-400) states that the error rate of functional annotations in the sequence database is considerable, making it even more difficult to infer correct function from a structural comparison of a new sequence with a sequence database (see especially p. 399). Such concerns are also echoed by Doerks et al. (1998, Trends in Genetics 14:248-250) who state that (1) functional information is only partially annotated in the database, ignoring multi functionality, resulting in underpredictions of functionality of a new protein and (2) overpredictions of functionality occur because structural similarity often does not necessarily coincide with functional similarity. Smith et al. (1997, Nature Biotechnology 15:1222-1223) remark that there are numerous cases in which proteins having very different functions share structural similarity due to evolution from a common ancestral gene.

Brenner (1999, Trends in Genetics 15:132-133) argues that accurate inference of function from homology must be a difficult problem since, assuming there are only about 1000 major gene superfamilies in nature, then most homologs must have different molecular and cellular functions. Finally, Bork et al. (1996, Trends in Genetics 12:425-427) add that the software robots that assign functions to new proteins often assign a function to a whole new protein based on structural similarity of a small domain of the new protein to a small domain of a known protein. Such questionable interpretations are written into the sequence database and are then considered facts.

Therefore, based on the discussions above concerning the specific examples of structurally similar proteins that have different functions, along with the art's recognition that one cannot rely upon structural similarity alone to determine functionality, the specification fails to teach the skilled artisan the utility of the claimed polynucleotides of SEQ ID NO:7 and 9, or the protein of SEQ ID NO:8 which are only known to be homologous to G protein-coupled receptors. Therefore, the instant claims are drawn to a polynucleotide encoding a protein which has a yet undetermined function or biological significance. There is no actual and specific significance which can be attributed to said protein identified in the

specification. For this reason, the instant invention is incomplete. In the absence of a knowledge of the natural ligands or biological significance of this protein, there is no immediately obvious patentable use for it. To employ a protein of the instant invention in the identification of substances which bind to and/or mediate activity of the said receptor is clearly to use it as the object of further research which has been determined by the courts to be a non-patentable utility. Since the instant specification does not disclose a "real-world" use for said protein then the claimed invention is incomplete and, therefore, does not meet the requirements of 35 U.S.C. 101 as being useful.

Furthermore, since the nucleic acids of the invention are not supported by a specific and substantial asserted utility or a well established utility, the vector, host cell, polypeptide and method for producing the claimed polypeptide also lack utility.

5. Claim Rejections - 35 USC § 112, first paragraph - enablement

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

A. Claims 1-7 and 12 are rejected under 35 U.S.C. 112, first paragraph, as failing to adequately teach how to use the instant invention. Specifically, since the claimed invention is not supported by a specific, substantial and credible asserted utility or a well established utility for the reasons set forth above, one skilled in the art clearly would not know how to use the claimed invention.

B. Furthermore, even if claim 1-7, and 12 possessed utility under 35 USC 101, they would still be rejected under 35 U.S.C. 112, first paragraph, because the specification, while then being enabling for the nucleic acid molecules of SEQ ID NO:7 and 9, does not reasonably provide enablement for proteins which are at least 60% identical to SEQ ID NO:7 and 9, or naturally occurring allelic variants of SEQ ID NO:7 and 9 which hybridize to SEQ ID NO:7 or 9. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make the invention commensurate in scope with these claims.

In In re Wands, 8USPQ2d, 1400 (CAFC 1988) page 1404, the factors to be considered in determining whether a disclosure would require undue experimentation include (1) the quantity of experimentation necessary, (2) the amount of direction or guidance presented, (3) the presence or absence

of working examples, (4) the nature of the invention, (5) the state of the prior art, (6) the relative skill of those in the art, (7) the predictability or unpredictability of the art, and (8) the breadth of the claims.

First, the breadth of the claims is excessive with regard to claiming polynucleotides which are "**at least 60% identical**" to SEQ ID NO:7 or 9, or "**naturally occurring allelic variants**" thereof which "**hybridize**" under stringent conditions to SEQ ID NO:7 or 9. These nucleic acid molecules would have one or more nucleic acid substitutions, deletions, insertions and/or additions to the polynucleotide of SEQ ID NO:7 and 9 and would encode for proteins with one or more amino acid substitutions, deletions, insertions and/or additions to the protein of SEQ ID NO:8.

Applicants provide no guidance or working examples of these nucleic acid molecules, or of the proteins which they encode, nor do they provide a *function* of these nucleic acid molecules or proteins. Applicants have provided no guidance as to what nucleotides or residues are required to maintain the functional characteristics of the protein of SEQ ID NO:8, or of any protein which is less that 100% identical to it which would be encoded by nucleic acid molecules other than those of SEQ ID NO:7 or 9, including any naturally occurring allelic variants. Furthermore, it is not predictable to one of ordinary skill in the art how to make a functional protein which is less than 100% identical to that of SEQ ID NO:8, including those encoded for by polynucleotides other than SEQ ID NO:7 or 9, regardless, respectfully, of the claim limitation of "having biological activity."

In addition, the claims include in scope allelic variants of the disclosed G protein-coupled receptors. The definition of "allele" is drawn exclusively to the state of a gene itself, and has no direct connotation regarding the protein encoded by the gene (it is noted that even genes or sequences which do not encode protein may exist as alleles). For example, Ayala and Kiger (Modern Genetics, Benjamin/Cumings 1980) define allele as "One of two or more alternative forms of a gene, each possessing a unique nucleotide sequence; different alleles of a given gene are usually recognized, however, by the phenotypes rather than by comparison of their nucleotide sequences." Thus, while allelic genes may result in a phenotypic change, the word does not have any particular connotation as to the encoded protein. Therefore, the Examiner cannot determine how one would distinguish, merely by examination of the protein, whether a protein were the result of expression of a different allele, or alternatively, were merely one of a number of ultimate species that might be obtained by the expression of one of the two sequences particularly disclosed in this application. In addition, enablement is not commensurate in scope with claims to proteins encoded by allelic variants of the disclosed sequences. The specification discloses the claimed proteins to be useful for their biological activity. However, allelic variants often encode proteins with quantitatively or qualitatively altered or absent biological activity.

Therefore, the specification does not teach how to use such variants, nor is adequate guidance provided for the skilled artisan to predict, *a priori*, which variants would reasonably be expected to retain biological function.

In summary, the breadth of the claims is excessive with regard to Applicants claiming all nucleic acids which are at least 60% identical to those of SEQ ID NO:7 and 9, or allelic variants thereof. There is also a lack of guidance and working examples of these nucleic acid molecules and proteins as well as which nucleotides and residues are critical for protein function. These factors, along with the lack of predictability to one of ordinary skill in the art as to how to make a functional G protein-coupled receptor protein other that that of SEQ ID NO:8, or encoded for by SEQ ID NO:7 or 9, leads the Examiner to hold that undue experimentation is necessary to practice the invention as claimed.

6. Claim Rejections - 35 USC § 112, first paragraph – written description

A. Claims 1-7 and 12 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

These are genus claims. Nucleic acid molecules which are "**at least 60% identical**" to SEQ ID NO:7 and 9 would have one or more nucleic acid substitutions, deletions, insertions and/or additions to said polynucleotides and would encode proteins with one or more amino acid substitutions, deletions, insertions and/or additions to the protein of SEQ ID NO:8.

The specification and claims do not indicate what distinguishing attributes are shared by the members of the genus. Thus the scope of the claims includes numerous structural variants, and the genus is highly variant because a significant number of structural differences between genus members is permitted. The specification and claims do not provide any guidance as to what changes should be made. Structural features that could distinguish compounds in the genus from others in the nucleic acid or protein class are missing from the disclosure. No common structural attributes identify the members of the genus. The general knowledge and level of skill in the art do not supplement the omitted description because specific, not general, guidance is what is needed. Since the disclosure fails to describe the common attributes or characteristics that identify members of the genus, and because the genus is highly variant, SEQ ID NO:7-9 alone are insufficient to describe the genus.

The specification provides a written description of only two of these nucleic acid constructs (SEQ ID NO:7 and 9). No other species are described, or structurally contemplated, within the instant specification. Therefore, one skilled in the art cannot reasonably visualize or predict critical nucleic acid residues which would structurally characterize the genus of nucleic acids encoding the genus of G protein-coupled receptors claimed, because it is unknown and not described what structurally constitutes any different nucleic acids encoding these proteins, or nucleic acids encoding these protein from any different species, which are further not described, or any different nucleic acid sequence that is "at least 60% identical" to SEQ ID NO:7 or 9; thereby not meeting the written description requirement under 35 USC 112, first paragraph. Therefore, one of skill in the art would reasonable conclude that the disclosure fails to provide a representative number of species to describe the genus. Thus, Applicant was not in possession of the claimed genus at the time the invention was made.

B. Claims 1-7 and 12 are also rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The written description in this case only sets forth SEQ ID NO:7 and 9 and equivalent degenerative codon sequences thereof and therefore the written description is not commensurate in scope with the claims drawn to "**naturally occurring allelic sequences**" of a DNA molecule comprising a DNA sequence consisting of SEQ ID NO:7 and 9.

Claims 1-7 and 12 are drawn to the genus including all DNA alleles of SEQ ID NO:7 and 9 which encode SEQ ID NO:8. The ordinary meaning of the term 'allele' is one of two or more alternate forms of a gene occupying the same locus in a particular chromosome or linkage structure and differing from other alleles of the locus at one or more mutational sites. See, Rieger et al., *Glossary of Genetics* (1991), p. 16. The Rieger et al. reference discloses that there are at least seven different kinds of alleles in addition to the 'strictly neutral' type discussed above for claims 1-7 and 12. See Rieger, pp 16-17 (amorphs, hypomorphs, hypermorphs, antimorphs, neomorphs, isoalleles and unstable alleles). The alleles are distinguished by the effect their different structures have on phenotype. According to Rieger et al., alleles may differ functionally according to their distinct structures. For example, they may differ in the amount of biological activity the protein product may have, in the amount of protein produced, and/or the kind of activity the protein product will have.

Thus, the structure of naturally occurring allelic sequences are not defined. With the exception of

SEQ ID NO:7 and 9, the skilled artisan cannot envision the detailed structure of the encompassed polynucleotides and therefore conception is not achieved until reduction to practice has occurred, regardless of the complexity or simplicity of the method of isolation. Adequate written description requires more than a mere statement that it is part of the invention and a reference to a potential method of isolating it. The nucleic acid itself is required. See *Fiers v. Revel*, 25 USPQ 2d 1601 at 1606 (CAFC 1993) and *Amgen Inc. V. Chugai Pharmaceutical Co. Lts.*, 18 USPQ2d 1016.

The specification discloses only two alleles encoding the protein within the scope of the genus: SEQ ID NO:7 and 9 for the protein of SEQ ID NO:8. The specification proposes to discover other members of the genus by using a hybridization procedure. There is no description of the mutational sites that exist in nature, and there is no description of how the structure of the DNA encoding the claimed "allelic variants" relates to the structure of different alleles. In addition, according to the standard definition, the genus includes members that would be expected to have widely divergent functional properties. The general knowledge in the art concerning alleles does not provide any indication of how the structure of one allele is representative of other unknown alleles having concordant or discordant functions. The common attributes of the genus are not described and the identifying attributes of individual alleles, other than SEQ ID NO:7 and 9, are not described. The nature of alleles is that they are variant structures where the structure of one does not provide guidance to the structure and function of others. According to these facts, one of skill in the art would conclude that the Applicant was not in possession of the claimed genus because a description of only two members of the genus is not representative of the variants of the genus and is insufficient to support the claim.

Vas-Cath Inc. V. Mahurkar, 19 USPQ2d 1111, clearly states that "applicant must convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession *of the invention.* The invention is, for purposes of the 'written description' inquiry, *whatever is now claimed.*" (See page 1117). The specification does not "clearly allow persons of ordinary skill in the art to recognize that [he or she] invented what is claimed." (*See Vas-Cath* at page 1116). Applicant is reminded that *Vas-Cath* makes clear that the written description provision of 35 USC 112 is severable from its enablement provision (see page 115).

Furthermore, In *The Regents of the University of California v. Eli Lilly* (43 USPQ2d 1398-1412), the court held that a generic statement which defines a genus of nucleic acids by only their functional activity does not provide an adequate written description of the genus. The court indicated that while Applicants are not required to disclose every species encompassed by a genus, the description of a genus is achieved by the recitation of a representative number of DNA molecules, usually defined by a

nucleotide sequence, falling within the scope of the claimed genus. At section B(1), the court states that "An adequate written description of a DNA...'requires a precise definition, such as by structure, formula, chemical name, or physical properties', not a mere wish or plan for obtaining the claimed chemical invention."

There is insufficient disclosure in the specification to support the generic claims as provided by the Interim Written Description Guildlines published in the June 15, 1998 Federal Register at Volume 63, Number 114, pages 32639-32645. Therefore only an isolated DNA molecule comprising a DNA sequence of SEQ ID NO:7 and 9 and equivalent degenerative codon sequences thereof, but not the full breadth of the claims, meets the written description provision of 35 USC 112, first paragraph.

7. Claim Rejections - 35 USC § 112, second paragraph

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

A. Claims 1-7 and 12 are vague and indefinite since claim 1 recites "stringent conditions." It is not known what these conditions are. Nucleic acid molecules which hybridize under conditions of "low" stringency would not necessarily hybridize under conditions of "high" stringency. Furthermore, not all conditions of "high" or "low" stringency, for example, are the same. Therefore, it is required that Applicants amend the claims to recite the exact hybridization conditions without using indefinite phrases such as "*for example*" **without adding new matter**.

8. Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

A. Claims 1, 3-7 and 12 are rejected under 35 U.S.C. 102(a) as being anticipated by Duman Milne Edwards et al. (WO 99/06548). The claims recite a nucleic acid molecule comprising at least 20 nucleotides of SEQ ID NO:7 or 9, or encoding a fragment comprising at least 15 contiguous amino acids of SEQ ID NO:8. The claims also recite vectors, host cells and methods of making the protein. Dumas

Milne Edwards et al. teach a protein which comprises approximately 120 contiguous bases of SEQ ID NO:7 (Sequence Comparison A) and SEQ ID NO:9 (Sequence Comparison D). Dumas also teach that the nucleic acid similar to SEQ ID NO:7 of the present invention also encodes approximately 40 contiguous amino acids of SEQ ID NO:8 (Sequence Comparisons B and C). Dumas et al. also teach vectors, host cells and methods for making proteins (Example 30, pages 58-64). Due to the length of this patent (824 pp) only the pertinent pages have been printed.

9. Conclusion

A. No claim is allowable.

Advisory information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert Landsman whose telephone number is (703) 306-3407. The examiner can normally be reached on Monday - Friday from 8:00 AM to 5:00 PM (Eastern time) and alternate Fridays from 8:00 AM to 5:00 PM (Eastern time).

If attempts to reach the examiner by telephone are unsuccessful, the Examiner's supervisor, Gary Kunz, can be reached on (703) 308-4623.

Official papers filed by fax should be directed to (703) 308-4242. Fax draft or informal communications with the examiner should be directed to (703) 308-0294.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0196.

Robert Landsman, Ph.D.
Patent Examiner
Group 1600
April 07, 2003

ROBERT LANDSMAN
PATENT EXAMINER